

and 51 to follow claims 8 and 14 respectively, and claims 27 through 31 moved to follow claim 32):

a 8. (amended) The printer of claim 1, further  
b comprising:

c a mechanism for advancing the second sensor into a  
d measurement position at only low velocity and only low  
e positioning accuracy needed for roughly centering the  
f second sensor over successive colorimetric test-pattern  
g patches in turn.

a 50. (new, to follow claim 8) The printer of claim 8,  
b wherein:

c the low positioning accuracy is on the order of 0.5  
d to 2.5 mm (1/50 to 1/10 inch).

a 14. (amended) The printer of claim 11, wherein:  
b the second carriage scans a sensor over such medium  
c at only low velocity and only low positioning accuracy  
d needed for roughly centering the second sensor over  
e successive colorimetric test-pattern patches in turn.

a 51. (new, to follow claim 14) The printer of claim 14,  
b wherein:

c the low positioning accuracy is on the order of 0.5  
d to 2.5 mm (1/50 to 1/10 inch).

a       32. (amended) An [The] incremental printing system for  
b forming desired images on a printing medium, by con-  
c struction from very large numbers of individual liquid-  
d ink drops ejected onto such medium in arrays; said  
e printing system [of claim 26, further] comprising:  
f       at least one inkdrop-placing module for ejecting  
g very large numbers of liquid-ink drops onto such medium  
h substantially whenever the printing system is in use for  
i forming images;  
j       at least one sensor, having at least one optical  
k surface, for infrequently measuring, substantially when  
l the printing system is not in use for forming images,  
m characteristics of ink previously received on such me-  
n dium from the at least one inkdrop-placing module;  
o       an automatic microprocessor for using the measured  
p characteristics in refining operation of the inkdrop-  
q placing module, to optimize the quality of images formed  
r on such medium thereafter;  
s       a door for protecting the at least one optical  
t surface of the at least one sensor from being coated by  
u atmospherically carried residual liquid ink when the at  
v least one sensor is not in use, including whenever the  
w printing system is in use for forming images; and  
x       a mechanism for automatically opening the door  
y before use of the at least one sensor, and for automati-  
z cally closing the door after use of the at least one  
aa sensor;  
bb       wherein the microprocessor can reliably optimize  
cc the quality of images, free from measurement degradation  
dd by coating of liquid ink on the at least one optical  
ee surface; and  
ff       means for measuring at least one absolute color  
gg reference when the door is not open to admit color  
hh characteristics of the previously received ink to the  
ii sensor.

a 27. (amended; moved to follow claim 32) The printing  
b system of claim 32 [26], wherein:

c the door-opening mechanism also moves the sensor  
d into a measurement position.

a 28. (amended; moved to follow claims 32 and 27) The  
b printing system of claim 32 [26], wherein the door-open-  
c ing-and-closing mechanism is:

d for automatically opening the door substantially in  
e preparation for use of the sensor; and also

f for automatically closing the door promptly after  
g use of the sensor.

a 29. (amended; moved to follow claims 32, 27 and 28)

b The printing system of claim 32 [26], wherein:

c the at least one sensor has multiple optical sur-  
d faces; and

e the door is for protecting substantially all of the  
f multiple optical surfaces from being coated by  
g atmospherically carried residual liquid ink when the at  
h least one sensor is not in use, including whenever the  
i printing system is in use for forming images.

a 30. (amended; moved to follow claim 32, and claims 27  
b through 29) The printing system of claim 32 [26],  
c wherein the at least one sensor comprises:

d a sensor for measuring color properties of the pre-  
e viously received ink; and

f a sensor for determining, from patterns of the  
g previously received ink, condition of the at least one  
h inkdrop-placing module.

a 31. (amended; moved to follow claims 32 and 27 through  
b 30) The printing system of claim 32 [26], wherein:  
c the at least one inkdrop-placing module comprises  
d at least two modules for placing ink; and  
e the at least one sensor comprises:  
f  
g a sensor for measuring color properties of the  
h previously received ink, and  
i  
j a sensor for use in determining, from patterns  
k of the previously received ink, condition  
l or relative positioning, or both, of the  
m inkdrop-placing modules.

a 35. (amended) The printing system of claim 32 [26],  
b wherein:  
c the door is a shutter.

Clean copies: Here are clean copies of the same claims.  
For the Examiner's convenience, the claims have been placed in  
dependency order as amended (new claims 50 and 51 to follow  
claims 8 and 14 respectively, and claims 27 through 31 moved  
to follow claim 32):

of  
Pb.  
PC

1       8. The printer of claim 1, further comprising:  
2            a mechanism for advancing the second sensor into a  
3            measurement position at only low velocity and only low  
4            positioning accuracy needed for roughly centering the  
5            second sensor over successive colorimetric test-pattern  
6            patches in turn.

BB  
SAC  
SL

1       50. The printer of claim 8, wherein:  
2            the low positioning accuracy is on the order of 0.5  
3            to 2.5 mm (1/50 to 1/10 inch).

BB  
Pb.  
PC

1       14. The printer of claim 11, wherein:  
2            the second carriage scans a sensor over such medium  
3            at only low velocity and only low positioning accuracy  
4            needed for roughly centering the second sensor over  
5            successive colorimetric test-pattern patches in turn.

SAC  
SL

1       51. The printer of claim 14, wherein:  
2            the low positioning accuracy is on the order of 0.5  
3            to 2.5 mm (1/50 to 1/10 inch).

32. An incremental printing system for forming desired images on a printing medium, by construction from very large numbers of individual liquid-ink drops ejected onto such medium in arrays; said printing system comprising:

at least one inkdrop-placing module for ejecting very large numbers of liquid-ink drops onto such medium substantially whenever the printing system is in use for forming images;

at least one sensor, having at least one optical surface, for infrequently measuring, substantially when the printing system is not in use for forming images, characteristics of ink previously received on such medium from the at least one inkdrop-placing module;

an automatic microprocessor for using the measured characteristics in refining operation of the inkdrop-placing module, to optimize the quality of images formed on such medium thereafter;

a door for protecting the at least one optical surface of the at least one sensor from being coated by atmospherically carried residual liquid ink when the at least one sensor is not in use, including whenever the printing system is in use for forming images; and

a mechanism for automatically opening the door before use of the at least one sensor, and for automatically closing the door after use of the at least one sensor;

wherein the microprocessor can reliably optimize the quality of images, free from measurement degradation by coating of liquid ink on the at least one optical surface; and

means for measuring at least one absolute color reference when the door is not open to admit color characteristics of the previously received ink to the sensor.

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1       27. The printing system of claim 32, wherein:  
2               the door-opening mechanism also moves the sensor  
3               into a measurement position.

1       28. The printing system of claim 32, wherein the door-  
2               opening-and-closing mechanism is:  
3               for automatically opening the door substantially in  
4               preparation for use of the sensor; and also  
5               for automatically closing the door promptly after  
6               use of the sensor.

1       29. The printing system of claim 32, wherein:  
2               the at least one sensor has multiple optical sur-  
3               faces; and  
4               the door is for protecting substantially all of the  
5               multiple optical surfaces from being coated by  
6               atmospherically carried residual liquid ink when the at  
7               least one sensor is not in use, including whenever the  
8               printing system is in use for forming images.

1       30. The printing system of claim 32, wherein the at  
2               least one sensor comprises:  
3               a sensor for measuring color properties of the pre-  
4               viously received ink; and  
5               a sensor for determining, from patterns of the  
6               previously received ink, condition of the at least one  
7               inkdrop-placing module.